

17.

[1]. $Q \neq 2$.

$$\begin{cases} (a-2)x \geq 2a^2-5a+2 & \text{--- (1)} \\ |x+1| \leq 3 & \text{--- (2)} \end{cases}$$

(1) $2a^2 - 5a + 2$

$$2 \frac{(a-2)(2a-1)}{a^2}$$

$$A - 2 > 0 \Rightarrow A > \underline{2} \quad a \in \mathbb{R}.$$

① 54. $x \geq \frac{(a-2)(2a-1)}{a-2} = 2a-1$

$$a - 2 < 0 \Rightarrow a < 2 \text{ and } 2.$$

$$x \leq 2a - 1$$

(2). (2) 54

$$-3 \leq x+1 \leq 3.$$

$$-4 \leq x \leq 2$$

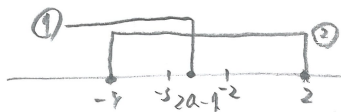
① 169 ② 245 可复元 整块又 20

存在可证之否也。

$$a > 2 \text{ and } x \geq 2a-1 > 3.$$

(2) 在 π 处不连续.

$$Q \in 2 \times 2\mathbb{Z}, \quad x \leq 2a-1$$



$$-3 \leq 2a-1 < -2 \quad \text{无解}$$

$$-2 \leq 2a < -1.$$

$$\frac{-1}{-7} \leq 2 \quad \text{and} \quad \frac{-1}{-1} < -\frac{1}{2}$$

[2]

$$\begin{array}{rcl} x = 0, \hat{x} & y = 8, \hat{y} & a = 0, \hat{a} = \frac{y}{x} \quad \frac{2}{1} \\ -10x = 4, \hat{x} & -10y = 88, \hat{y} & \\ \hline -9x = -4 & -9y = -76 & b = 8, \hat{b} = \frac{76}{9} \quad \frac{6}{1} \\ x = \frac{y}{9} & y = \frac{76}{9} & \end{array}$$

命题 P: $\neg(x^2 < a \text{ 且 } x^2 > b-a) \Rightarrow x > -1$

对偶P: $x \leq -1 \Rightarrow \underbrace{x^1 \leq a + 1}_{Z_0} \quad \underbrace{x^2 \leq b - 1}_{Z_1}$

$$x^2 \geq \frac{4}{9} \Rightarrow x \leq -\frac{2}{3}, \frac{2}{3} \leq x$$

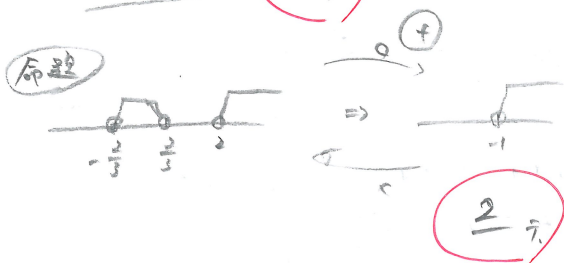
$$x^2 \leq \frac{76}{9} - \frac{4}{9} = \frac{72}{9} = 8 \quad x \leq 2.$$

$$x^2 \geq 0 \text{ m.d. } x^2 \leq b-a$$

$$\Rightarrow x \in -\frac{\sqrt{2}}{2} \cdot \frac{2}{2} \leq x \leq 2$$

命题 P_1 对偶 P_2

計 12 頁



[3]

$$\begin{aligned}
 G: f(x) &= x^2 - 4ax + 5a^2 + 2a - 8 \\
 &= (x - 2a)^2 - 4a^2 + 5a^2 + 2a - 8 \\
 &= (x - 2a)^2 + a^2 + 2a - 8 \\
 \textcircled{1} & (2a, a^2 + 2a - 8)
 \end{aligned}$$

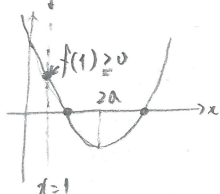
$$(1) \quad a^2 + 2a - 8 < 0$$

$$(a+4)(a-2) < 0$$

$$-4 < a < 2$$

2-1.

(2).



$$\begin{cases}
 (1) : -4 < a < 2 & -① \\
 \text{軸} : 2a > 1 & -② \\
 f(1) \geq 0 & -③
 \end{cases}$$

$$(2) \quad a > \frac{1}{2} \quad -③'$$

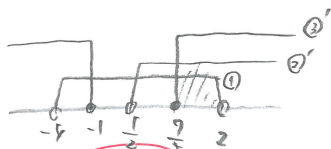
③ 1/

$$f(1) = 1 - 4a + 5a^2 + 2a - 8$$

$$= 5a^2 - 2a - 7 \geq 0$$

$$(a+1)(5a-7) \geq 0$$

$$a \leq -1, \frac{7}{5} \leq a. \quad -③'$$



$$\frac{7}{5} \leq a < 2$$

11-2.

[2]

[1]

$$\begin{cases}
 \cos B = -\frac{\sqrt{15}}{8} \\
 \sin C = \frac{1}{4}
 \end{cases}$$

$$\sin B = \sqrt{1 - \frac{15}{64}} = \sqrt{\frac{49}{64}}$$

$$= \frac{7}{8} \quad \text{2-1}$$

$$2R = \frac{AB}{\sin C}$$

$$R = \frac{2}{\frac{7}{8} \times \frac{1}{4}} = \frac{4}{1} \quad \text{2-1}$$

$$\frac{AC}{\sin B} = 2R \quad AC = 8 \times \frac{7}{8} = 7 \quad \text{2-1}$$

$$BC = x \quad \text{2-1}$$

$$\frac{2^2 + x^2 - 7^2}{2 \cdot 2 \cdot x} = -\frac{\sqrt{15}}{8}$$

$$\frac{4 + x^2 - 49}{4x} = -\frac{\sqrt{15}}{8}$$

$$2(x^2 - 45) = -\sqrt{15}x$$

$$2x^2 + \sqrt{15}x - 90 = 0$$

$$x = \frac{-\sqrt{15} \pm \sqrt{15 + 920}}{4}$$

$$= \frac{-\sqrt{15} \pm \sqrt{935}}{4} = \frac{-\sqrt{15} \pm 7\sqrt{15}}{4}$$

$$BC > 0 \quad \text{2-1}$$

$$BC = \frac{-\sqrt{15} + 7\sqrt{15}}{4} = \frac{6\sqrt{15}}{4} = \frac{3\sqrt{15}}{2} \quad \text{2-1}$$

$$BE = \sqrt{8^2 - \left(\frac{3\sqrt{15}}{2}\right)^2} = \sqrt{64 - \frac{135}{4}} = \sqrt{\frac{256 - 135}{4}} = \sqrt{\frac{121}{4}} = \frac{11}{2}$$

$$\triangle ABD \sim \triangle ECD \quad \text{2-1} \quad 2 : \frac{11}{2} = 4 : 11$$

$$y : 8 - z = 4 : 11$$

$$z : 7 - y = 4 : 11$$

$$11y = 32 - 4z$$

$$11z = 28 - 4y$$

$$y = \frac{32 - 4z}{11}$$

$$\text{代入}$$

$$11z = 28 - 4 \cdot \frac{32 - 4z}{11}$$

$$121z = 308 - 128 + 16z$$

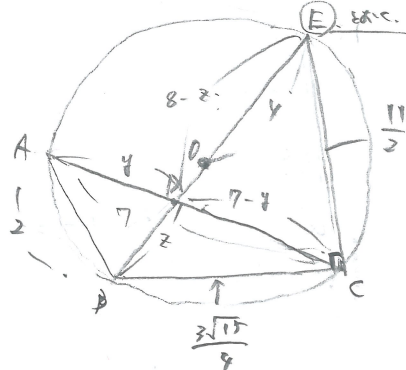
$$105z = 180 \quad \text{2-1}$$

$$z = \frac{12}{7} = BD$$

$$DE = 8 - \frac{12}{7} = \frac{56 - 12}{7} = \frac{44}{7}$$

$$OD = \frac{44}{7} - 4 = \frac{44 - 28}{7} = \frac{16}{7}$$

$$\frac{OD}{OB} = \frac{\frac{16}{7}}{4} = \frac{4}{7} \quad \text{4-2}$$



$$\begin{array}{r}
 1235 \\
 3117 \\
 \hline
 949 \\
 9 \\
 \hline
 9
 \end{array}$$

$$\begin{array}{r}
 28 \\
 11 \\
 \hline
 28 \\
 28 \\
 \hline
 308
 \end{array}$$

[2]. (12) 1: 3.5 2: 6.7 3: 9.10

(振軸) 固定: min 2640

31: 2675

32: 2730

33: 2775

max: 2830

(12軸) 移動: min: 9960

31: 10150

32: 10440

33: 10620

max: 10730

(1) 振軸 A - b.

(2) 振軸 B - f.

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[3]

(1) ① × ② × ③ ○ ④ ○

2, 3 = 2

(2) 振軸 - 頁: 3

N 振軸

$$\begin{array}{r} 252.05 \\ -504.1 \\ \hline 886.20 \\ 0.28 \\ \hline 886 \overline{) 252.05} \\ \underline{1772} \\ 7485 \end{array} = -0.28$$

7

(3) $\bar{x} = \frac{\frac{1}{2}x}{n} = \frac{1}{2} \bar{x}$

分散: $\frac{(\frac{1}{2}x - \frac{1}{2}\bar{x})^2}{n} = \frac{1}{4} S^2$

標準: $\frac{1}{2} S$

$\frac{x}{y} = \frac{\frac{1}{2}y}{y} = \frac{1}{4}$ 2

$\frac{x}{w} = \frac{2w}{w} = 2$ 3

[3]

R: 3
W: 1

(1) (R) $\frac{3}{4}$

(W) $\frac{1}{4}$

(2) ① 12 と 12 星 2012 年 → 2012 年

☆☆ (W) $(\frac{1}{4})^2 = \frac{1}{16}$ 1

☆ (R) 27 $\frac{3}{4} \times \frac{2}{4} = \frac{3}{8}$ 2

☆☆ (W) $\frac{1}{4} \times \frac{3}{4} \times \frac{2}{4} = \frac{3}{8}$ 3

(W) - (R) / (R) - (W)

(3) ○ → ○ → ○ ○ ☆ 2 と 12 と 12 と 12

4 と 12

① 12 と 12

② 12 と 12 (R) (W) $\frac{3}{8} \times \frac{1 \times 1}{4 \times 2} = \frac{3}{8} \times \frac{1}{4 \times 2} = \frac{1}{16}$

③ 12 と 12 (R) (R) $\frac{3}{8} \times \frac{1}{4 \times 2} = \frac{1}{16}$

$\frac{1}{16} + \frac{1}{16} = \frac{2}{16} = \frac{1}{8} = 2$

(R) ☆ 9 と 12 と 12 と 12

① 12 と 12

② 12 と 12 (R) (12 と 12) (W)

$\frac{3}{8} \times \frac{2 \times 1}{4 \times 2} = \frac{3}{8} \times \frac{2}{4 \times 2} = \frac{1}{8}$

③ 12 と 12 (R) 2 = (12 と 12)

$\frac{3}{8} \times \frac{1 \times 2}{4 \times 2} = \frac{1}{8}$

☆☆ (R) → (R) (☆☆), (R) (☆☆)

$(\frac{1}{4})^2 \times 3 \times \frac{2 \times 1}{4 \times 2} = \frac{1}{16} \times 3 \times \frac{1}{4 \times 2} = \frac{1}{16}$

☆☆ (R) → (R) (☆☆), (W)

$(\frac{1}{4})^2 \times 3 \times \frac{2 \times 1}{4 \times 2} = \frac{1}{16}$

$\frac{1}{8} + \frac{1}{8} + \frac{1}{16} + \frac{1}{16} = \frac{2+2+1+1}{16} = \frac{6}{16} = \frac{3}{8}$

(1) $a = 315, b = 3528$

$$\begin{array}{r} 2 \overline{) 3528} \\ \underline{2176} \\ 1352 \\ \underline{1056} \\ 296 \\ \underline{280} \\ 16 \end{array}$$

$$b = 2^3 \cdot 3^2 \cdot 7^2$$

b 的质因数

$$4 \times 3 \times 3 = 36$$

$$a = 3^2 \cdot 5 \cdot 7$$

a 与 b 的最大公因数

$$3^2 \cdot 7 = 63$$

$$\frac{an}{b} = \frac{3^2 \cdot 5 \cdot 7 \cdot n}{2^3 \cdot 3^2 \cdot 7^2} = \frac{5n}{2^3 \cdot 7}$$

分母 a 的质因数 2 与 7 的质因数

$$72 \text{ 个 } 7, n = 7$$

(2) $63000 = 3^2 \cdot 7 \cdot 10^3 = 2^3 \cdot 3^2 \cdot 5^3 \cdot 7$

$$ax + by = 63000 \quad \text{--- (1)}$$

$$3^2 \cdot 5 \cdot 7x + 2^3 \cdot 3^2 \cdot 7^2y = 2^3 \cdot 3^2 \cdot 5^3 \cdot 7$$

$$5x + 2^3 \cdot 7y = 2^3 \cdot 5^2$$

$$2^3 \cdot 7y = 5(2^3 \cdot 5^2 - x)$$

$$56y = 5(200 - x)$$

$$\begin{cases} 200 - x = 56k \\ y = 5k \end{cases}$$

$$y = 5k$$

$$x = 200 - 56k$$

$$y = 5k \rightarrow k \geq 0$$

$$\begin{cases} k=0, (x, y) = (200, 0) \\ k=1, \quad \quad \quad = (144, 5) \\ k=2, \quad \quad \quad = (88, 10) \\ k=3, \quad \quad \quad = (32, 15) \end{cases}$$

x 的最小值

$$(32, 15)$$

(2)

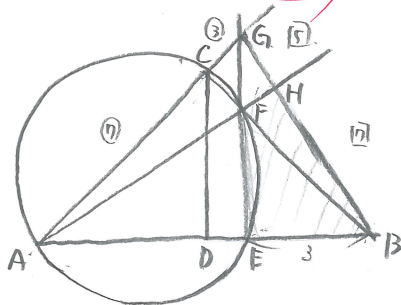
$$\frac{15}{32} = 0.46875 = 0.01111(2)$$

$$\begin{array}{r} 0.46875 \\ 32 \overline{) 115.0} \\ \underline{96} \\ 190 \\ \underline{160} \\ 300 \\ \underline{288} \\ 120 \\ \underline{112} \\ 80 \\ \underline{80} \\ 0 \end{array}$$

(2)

$$\begin{array}{r} 0.46875 \\ 1 \overline{) 4.6875} \\ \underline{4} \\ 0.6875 \\ \underline{0.64} \\ 0.0475 \\ \underline{0.04} \\ 0.0075 \\ \underline{0.007} \\ 0.0005 \\ \underline{0.0005} \\ 0 \end{array}$$

$$S_{ABC} = 8 \times \frac{1}{2} \sqrt{5} \times \frac{1}{2} = \frac{8\sqrt{5}}{2} \text{ DI}$$


$$BF \cdot BC = BE \cdot BA$$

×ネーウス

$$\frac{AG}{GC} \cdot \frac{CF}{FB} \cdot \frac{BE}{EA} = 1$$

$$\frac{AG}{GC} \cdot \frac{2}{42} \cdot \frac{3}{5} = 1$$

$$\frac{AG}{GC} = \frac{10}{3} \quad p \sim 2$$

$$\frac{BH}{HG} \cdot \frac{GC}{CA} \cdot \frac{AE}{EB} = 1$$

$$\frac{BH}{HG} \cdot \frac{3'}{7} \cdot \frac{5}{5} = 1$$

$$\frac{BH}{HG} = \frac{7}{5}$$

$$\frac{BH}{GB} = \frac{FA}{HF} = \frac{CG}{AC} = 1$$

$$\frac{FA}{HF} \cdot \frac{3'}{5'} = 1$$

$$\frac{FA}{HF} = \frac{x}{1}$$

$$AF: FH = 4:1 \quad \text{J''}$$

$$\Delta BHF = \Delta ABG \times \frac{7}{12} \times \frac{1}{5} = \frac{7}{60} \Delta ABG$$

$$\Delta BEF = \Delta ABG \times \frac{2}{f_2} \times \frac{f_1}{f} \times \frac{f_1}{8_2} = \frac{2}{f_0} \Delta ABG$$

$$\Delta ABG = \Delta ABC \times \frac{10}{7} = \frac{10}{7} \Delta ABC.$$

$$BEFH = \triangle BHF + \triangle BEF$$

$$= \left(\frac{7}{60} + \frac{7}{40} \right) \Delta ABG$$

$$= \frac{18+21}{120} \times \frac{10}{7} \Delta ABC$$

$$= \frac{35^5}{2^3} \times \frac{1}{4} \times 8\sqrt{5} = \frac{10\sqrt{5}}{3} \text{ m/s}$$